

## **NEWS RELEASE**

### **FIRST PRIVATE DEVELOPER TO BE AWARDED BCA'S *GREEN MARK PLATINUM* FOR ENVIRONMENTAL SUSTAINABILITY**

City Developments Limited (CDL) has been conferred two prestigious BCA Green Mark Platinum awards by the Building and Construction Authority (BCA) for the BCA Awards 2007 – setting yet another industry benchmark.

2 The BCA Green Mark was introduced in January 2005. It is a scheme that assesses the environmental impact and performance of buildings and promotes the development of more environmental-friendly buildings and a more sustainable built environment in Singapore.

3 With its win for City Square Mall (commercial) and The Oceanfront @ Sentosa Cove (residential), CDL is the first private developer to have been awarded this high honour which have previously been accorded to only public sector developments.

4 The BCA Green Mark Platinum is awarded to exemplary green projects that effectively demonstrate 30% energy and water savings, as well as environmentally-sustainable building practices and innovative green features.

5 Since the introduction of the Green Mark award in 2005, CDL has attained the highest number of awards conferred on a developer with a total of 14 Green Mark awards and certification. This is the first time CDL has attained the platinum recognition for its notable effort in developing eco-friendly properties with environmental sustainability in mind.

6 This win attests to CDL's position as the leading green developer having adopted a systematic and holistic approach to developing quality properties, managing cost effective and energy efficient buildings and influencing its stakeholders and the community. CDL is committed to its "Safe and Green" culture which emphasises environmental and occupational health and safety standards in all its projects. So important was this driving motivation that CDL formalised its Environmental Health and Safety Policy in 2003, which has been the foundation for its award winning developments.

7 Mr Tan Tian Chong, Director (Technology Development) of BCA said, "The BCA Green Mark award aims to recognise developer's firm commitment and significant effort in making its properties eco-friendly. It is very important to have both the public and private sectors working together to contribute effectively to fulfil Singapore's Green Building Masterplan. Green buildings are a reality and CDL's sustainable efforts have proven that with good planning, commitment and being innovative, a private developer does not only make its projects eco-friendly, but also influences its stakeholders to be mindful of green

practices. This will have a ripple effect in the industry and the community. We look forward to having greater support from the private developers in our green building efforts.”

9 Sharing his thoughts on his company’s green strategy, CDL’s Managing Director Kwek Leng Joo said, “Minimising the impact of our business on the environment has always been an integral part of CDL’s corporate mission. The building industry is a major consumer of energy and one of the biggest generators of waste. With green building efforts, besides benefiting from an improvement in operational efficiency, we will also contribute immensely to environmental conservation. We have been adopting the Green Building approach since 2001 and we are glad that our efforts are in line with the government’s vision to be a socially-responsible, environmentally-conscious global city. This vision will be realised sooner given BCA’s effort in making green building practices a common denominator in the property and construction sector through its various incentive and award schemes such as the BCA Green Mark.”

10 Ultimately, the objective is to minimise the overall impact on the environment during both the construction process and the development’s lifespan. According to Mr Achim Steiner, Head of the United Nation Environmental Programme (UNEP), in the UN study unveiled on 29 March 2007, the building sector worldwide could deliver emission reductions of 1.8 billion tonnes of carbon dioxide through green building design and energy-saving features. The better use of natural resources and energy in homes and offices could result in a 30 to 40 per cent reduction in total energy use worldwide. In the long-term, this would contribute significantly in combating climate change and global warming.

11 CDL has been initiating and implementing eco-friendly innovations for homes and offices since 2001. The Group’s commitment towards environmental-sustainability will result in substantial benefits, both to the environment and the end-user. City Square Mall with its numerous green innovations was designed to be the prototype of an eco-friendly and community-friendly mall. The 700,000 square feet mall is projected to reduce its energy usage by approximately 39% compared to designs using standard industry codes. This results in an estimated emission reduction of over 5,700 tonnes of carbon dioxide per year. It would take approximately 25,750 trees to absorb this amount of carbon dioxide. This would undoubtedly contribute to the much needed effort to reduce global warming. To raise the awareness of environmental impact, a real-time count of carbon dioxide emission for the mall will be electronically displayed as part of CDL’s consciously planned infrastructure to create an eco-learning experience for both shoppers and tenants.

12 Fact Sheets on the following are enclosed:

1. BCA Green Mark Scheme
2. CDL’s BCA Green Mark Platinum projects, cost savings and benefits.

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Issued by the Building and Construction Authority and City Developments Limited on 5 April 2007.

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## **FACT SHEET 1**

The BCA Green Mark Scheme was launched in January 2005 as an initiative to move Singapore's construction industry towards more environment-friendly buildings. It is intended to promote sustainability in the built environment and raise environmental awareness among developers, designers and builders when they start project conceptualisation and design, as well as during construction.

### **CRITERIA AND SCORING SYSTEM**

BCA Green Mark is a rating system to evaluate a building for its environmental impact and performance. It provides a comprehensive framework for assessing building performance and environmental friendliness. Buildings are awarded the BCA Green Mark based on five key criteria:-

- Energy Efficiency
- Water Efficiency
- Site/Project Development & Management (Building Management & Operation for existing buildings)
- Good Indoor Environmental Quality & Environmental Protection
- Innovation

Under the Green Mark assessment system, points are awarded for incorporating environment-friendly features which are better than normal practice. The assessment identifies designs where specific targets are met. Meeting one or more targets indicates that the building is likely to be more environmental friendly than buildings where the issues have not been addressed. The total number of points obtained provides an indication of the environmental friendliness of the building design.

The assessment process consists of an initial assessment leading to the award of the Green Mark. Subsequently, buildings are required to have biennial assessment. This is to ensure that the Green Mark building continues to be well-maintained. Buildings are awarded Platinum, Gold<sup>PLUS</sup>, Gold or Certified rating depending on the points scored. Apart from achieving the minimum points in each rating scale, the project has to meet all pre-requisite requirements, and score a minimum of 50% of the points in each category, except the Innovation category.

The BCA Green Mark has assessment criteria for two main categories: New Buildings and Existing Buildings. The scheme for new buildings will provide the opportunity for developers to design and construct green, sustainable buildings which can promote energy savings, water savings, healthier indoor environments and adoption of greenery for their projects. The scheme for existing buildings will enable building owners and operators to meet their sustainable operations goals and to reduce adverse impacts of their buildings on the environment and occupant health over their entire life cycle.

New buildings assessed under the Green Mark will require a biennial assessment to maintain their Green Mark status. They will be assessed under the existing buildings

criteria during the biennial assessment. For existing buildings, they will be assessed under the existing buildings criteria unless they are undergoing a major refurbishment programme.

## **BENEFITS OF GREEN MARK**

BCA Green Mark provides a meaningful differentiation of buildings in the real estate market. It is a benchmarking scheme which incorporates internationally recognized best practices in environmental design and performance. This can have a positive effect on corporate image, leasing and resale value of buildings. The benefits of the BCA Green Mark include:

- Facilitate reduction in water and energy bills,
- Reduce potential environmental impact,
- Improve indoor environmental quality for a healthy and productive workplace,
- Provide clear direction for continual improvement

## FACT SHEET 2

### **THE FIRST PRIVATE COMMERCIAL PROJECT TO BE AWARDED BCA'S GREEN MARK PLATINUM**

#### CITY SQUARE MALL



Through its host of sustainable designs combining architectural, mechanical and electrical innovations such as a highly efficient central air-conditioning plant, City Square Mall is expected to reduce 5,700 tonnes of carbon dioxide emission in a year during operation. It would take approximately 25,750 trees to absorb this amount of carbon dioxide. This would undoubtedly contribute to the much needed effort to reduce global warming.

As Singapore's first Eco-Mall integrated with an urban park and many eco features, City Square Mall is designed to educate and influence the community about the importance of environmental conservation.

Designed with environmental sustainability in mind, City Square Mall will be the prototype of an eco-friendly and community-friendly shopping mall with a comprehensive range of innovative energy and water efficient features. This includes harnessing the use of natural light for the atriums of both the podium and tower block and by adopting a high-efficiency air-conditioning plant system. CDL invested approximately 5% of the total construction cost into the development of the Mall's numerous green innovations.

A landmark retail complex in more ways than one, The Mall's design features many of Singapore's "firsts". It will be the first shopping mall project to be integrated with an urban park, the first commercial project to boast a pneumatic waste collection system for an odour-free and pest-free environment that is built with separate chutes to encourage recycling of food and dry waste, as well as the first shopping mall to have motion sensors fitted into the basement car park to control lighting level for vehicles, amongst others.

Located at the junction of Serangoon and Kitchener Roads, City Square Mall comprises over 700,000 square feet of retail space. It will claim its place as Singapore's first Eco-Mall that provides an eco-learning experience to shoppers.

## GREEN FEATURES AT CITY SQUARE MALL

## BENEFITS

### Designed for Energy Efficiency

- Sunpath analysis for effectiveness of sunshades and wall insulation
- High-performance low-emissivity double glazing to reduce heat transmission
- High-efficiency air-conditioning plant system
- Lighting zoning and alternate lighting circuits for common areas
- Motion detectors for toilets and staircases
- Motion lighting sensor for vehicles at basement car park
- Eco green roof with solar panels and water-harvesting capabilities,
- Indoor greenery and landscaping to mitigate urban heat island effects
- Lifts, escalators and travellers designed with auto-lighting and ventilation fans and slow-down features

- Reduces total energy usage by approximately 39% compared to designs using standard industry codes
- Electricity saved per year estimated to amount to more than 11 million kWh
- Estimated reduction of 5,700 tonnes of carbon dioxide (CO<sub>2</sub>) emission per year (approximately 25,000 trees are required to absorb this amount of CO<sub>2</sub> emission)

### Designed for Water Efficiency

- Rainwater harvesting for plants irrigation (use of non-PUB potable water)
- "Eco-restrooms" with waterless urinals with "very good" to "excellent" water fitting under PUB's Water Efficiency Labelling Scheme
- Recycling of condensate water from Primary Air-handling Unit for cooling tower make up
- Water sub-meters to monitor water consumption and leak detection

- Reduce operational costs
- Estimated cost savings of \$48,000 per year

### Environmentally-sustainable Site / Project Development and Management Practices

- Conservation of eco-system with transplantation of existing trees
- Use of environmentally-friendly materials such as drywall partitions, non-chemical anti-termite system, recycled pre-cast concrete kerbs, drains, wheel stoppers, etc
- Use of non-PUB potable water for general cleaning on-site
- Treatment and recycling of silty water during construction

- Promotes environmental conservation with the restoration of the natural habitat for the community
- Saves natural resources such as sand and granite
- Estimated saving of 300 cubic metres of sand (equivalent to approximately 50 truck loads)

<p>Environmentally-sustainable Site / Project Development and Management Practices (cont...)</p>	<ul style="list-style-type: none"> <li>▪ Reduce usage of potable water during construction (approximately 16,800 cubic metres or equivalent to 8 Olympic-sized swimming pools)</li> </ul>
<p><b>Designed for Good Indoor Environmental Quality and Environmental Protection</b></p> <ul style="list-style-type: none"> <li>▪ Installation of sensors to monitor levels of indoor carbon dioxide and carbon monoxide</li> <li>▪ Designed with cooling load variations that correspond to thermal comfort</li> <li>▪ Air-purging system integrated with smoke extraction system for improvement of indoor air quality</li> </ul>	<ul style="list-style-type: none"> <li>▪ Improve occupational health and comfort</li> </ul>
<p><b>Design Innovations</b></p> <ul style="list-style-type: none"> <li>▪ Installation of a twin-chute pneumatic refuse collection and disposal system (for separation of food and dry waste)</li> <li>▪ Rain sensors for landscape irrigation</li> <li>▪ Non-chemical water treatment for cooling tower</li> <li>▪ Motion sensor for lighting level control for vehicles at basement car parks</li> <li>▪ Solar photovoltaic cells to light up sunken plaza</li> <li>▪ Light sensors at skylight of podium block to control electrical lighting</li> <li>▪ “Eco-restrooms” with waterless urinals, motion sensors for lightings and indoor planting</li> <li>▪ Designated car park lots for priority parking of Hybrid cars</li> <li>▪ Environmental-themed sculpture to raise public awareness on environmental conservation</li> <li>▪ Real-time display of indoor environmental performance for shoppers</li> <li>▪ Providing shoppers with Eco-Learning experience through labelling of eco-features within the mall and an eco-learning corner for children</li> </ul>	<ul style="list-style-type: none"> <li>▪ Odour-free and pest-free waste disposal system; twin-chutes encourage recycling amongst tenants</li> <li>▪ Reduce maintenance costs</li> </ul>



# THE FIRST PRIVATE RESIDENTIAL PROJECT TO BE AWARDED BCA'S GREEN MARK PLATINUM

## THE OCEANFRONT @ SENTOSA COVE



Waterfront living goes Green: Sentosa Cove's tallest residence is designed for energy and water efficiency and is the only development on the island to achieve BCA's Green Mark Platinum Award.

The epitome of waterfront living, The Oceanfront @ Sentosa Cove comprises 264 units of luxury apartments housed in five towers between 12 and 15 storeys in height. Located within the exclusive residential enclave of Sentosa Cove, the development will be framed by lush landscaping and water-features designed to enhance views of the sea and marina. Approximately 3.8% of the construction cost was invested into the design of these green features.

### GREEN FEATURES

### BENEFITS

#### Designed for Energy Efficiency

- Sunpath Analysis – computer simulation of sunpaths, solar insulation and daylight studies are used to determine the effectiveness of interior layouts
- Low-emissivity glass used extensively to minimise the heat transmission from the sun
- Extraction of heat from air-conditioning condensers for generating hot water for clubhouse use
- Installation of energy-efficient air-con (with 4-Ticks NEA Energy Label) for all apartment units
- Installation of motion sensors for lighting of common areas such as private lift lobby and clubhouse

- Energy savings can be enjoyed by residents from energy-efficient air-conditioners
- Reduce energy costs for air-conditioning (estimated at \$290,000 per year or up to \$1,000 per apartment per year on average)

#### Designed for Water Efficiency

- Rainwater harvesting system for irrigation of landscape
- Water sub-meters to monitor water consumption and detect leaks

- Reduce maintenance costs

<p><b>Environmentally-sustainable Site / Project Development and Management Practices</b></p> <ul style="list-style-type: none"> <li>▪ Eco-restoration with transplantation of 15 existing trees</li> <li>▪ Use of pre-fabricated bathroom units designed to reduce construction waste</li> <li>▪ Use of environmentally-friendly materials such as drywall partitions, non-chemical anti-termite system, recycled pre-cast concrete kerbs, drains, wheel stoppers</li> <li>▪ Use of recycled water on-site for general cleaning and flushing of workers' toilets</li> </ul>	<ul style="list-style-type: none"> <li>▪ Promote environmental conservation</li> <li>▪ Reduce construction waste and water for a clean worksite</li> </ul>
<p><b>Designed for Good Indoor Environmental Quality and Environmental Protection</b></p> <ul style="list-style-type: none"> <li>▪ Installation of a ductless mechanical ventilation system which incorporates carbon monoxide sensors in the car park.</li> <li>▪ Use of high-frequency ballasts for car parks and common areas to prevent flickering that is associated with fluorescent lighting</li> </ul>	<ul style="list-style-type: none"> <li>▪ Promote air quality and reduce maintenance costs</li> </ul>
<p><b>Design Innovations</b></p> <ul style="list-style-type: none"> <li>▪ "Pontos Grey Water Recycling System" for recycling water from apartment's showers, bathtubs and wash basins for flushing of clubhouse's toilets and irrigation of landscape</li> <li>▪ Installation of a twin-chute pneumatic waste collection system (for separation of domestic waste and recyclable items)</li> <li>▪ Solar Power System with photovoltaic cells for CCTV system</li> </ul>	<ul style="list-style-type: none"> <li>▪ Reduce maintenance and operational costs</li> <li>▪ Odour-free and pest-free waste disposal system; twin-chutes encourage recycling amongst residents</li> </ul>